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ABSTRACT:

PURPOSE: To lock and unlock a fixing unit with one touch to facilitate the attaching and detaching work by providing a lock member freely slidably provided in a device body and an energizing member which energizes this lock member and sliding the lock member with or against the energizing force of the energizing member.

CONSTITUTION: In case of attachment of a fixing unit 31, the fixing unit 31 is allowed to fall from above and has the lower end part brought into contact with an upper slope part 54a in front ends of lock levers 54 and is depressed as it is, and then, lock levers 54 are moved back against the energizing force of a flat spring 55 and are moved forward by the energizing force of a flat spring 51 and are engaged with detaining holes 31a and 31a of the fixing unit 31 to lock the fixing unit 31. In case of detachment of the fixing unit 31, a bending part 57 of a slider 53 is caught by a finger and is moved back against the energizing force of the flat spring 55 to disengage the front end part of the part 57 from detaining holes 59 and 59 of the fixing unit 31, thus releasing the lock.

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明 細 書

(従来技術)

1. 発明の名称

画像形成装置

2. 特許請求の範囲

装置本体内に画像定着用の定着ユニットを着脱自在に備えてなるものにおいて、前記装置本体にスライド自在に設けられたロック部材と、このロック部材を付勢する付勢部材とを具備し、上記付勢部材の付勢力あるいはその付勢力に抗してロック部材をスライド移動させることにより、該ロック部材を上記定着ユニットに係脱させてロックおよびそのロックを解除することを特徴とする画像形成装置。

3. 発明の詳細な説明

(発明の目的)

(産業上の利用分野)

本発明はたとえばレーザープリンターあるいは電子複写機などに適用される画像形成装置に関する。

レーザープリンターなどにおいては、用紙に画像を転写させたのち、この画像を定着ユニットにより、用紙に定着させて排出するようになっているが、近時においては、上記定着ユニットの保守点検等を容易化するため、定着ユニットをカートリッジ化し、装置本体に対し着脱できるようにしたものが開発されている。この定着ユニットは装置本体内にセットされたときはロックされ、取出すときはロックを解除してから取出されるようになっている。

(発明が解決しようとする問題点)

しかしながら、従来においては、定着ユニットをボルトなどを用いてロックしていたため、定着ユニットのロックおよびその解除に手間取り、作業性が悪いという問題点があった。

本発明は上記事情に着目してなされたもので、その目的とするところは、定着ユニットのロックおよびその解除をワンタッチで行うことができるようにした画像形成装置を提供しようとするもの

である。

(発明の構成)

(問題点を解決するための手段)

本発明は上記問題点を解決するために、装置本体内に画像定着用の定着ユニットを着脱自在に備えてなるものにおいて、前記装置本体内にスライド自在に設けられたロック部材と、このロック部材を付勢する付勢部材とを具備し、上記付勢部材の付勢力あるいはその付勢力に抗してロック部材をスライド移動させることにより、該ロック部材を上記定着ユニットに係脱させてロックおよびそのロックを解除することを特徴とするものである。

(作用)

ロックレバーをスライド移動させるだけで、定着ユニットがロックされ、あるいはそのロックが解除される。

(実施例)

以下、本発明を図面に示す一実施例を参照して説明する。第5図および第6図は本発明の画像

部には帯電装置16、レーザー光学系17、現像装置18、転写装置19、剥離装置20、クリーニング装置21、および除電装置22が順次配設されている。

さらに、プリンタ本体5内には、感光体15と転写装置19との間の画像転写部23を経て前方に伸びる搬送路24が形成されており、プリンタ本体5内の底部に収納された給紙カセット25およびマルチカセットフィーダ3の給紙カセット26、27からそれぞれ給紙ローラ28…および移送ローラ29…などを介して自動給紙された用紙P、手差しトレイ13から手差し給紙された用紙P、およびエンベロープフィーダ3から自動供給された封筒Aを前記画像転写部23に導くようになっている。

また、この搬送路24の画像転写部23の上流側にはアライニングローラ対30が配設され、下流側には定着ユニット31、排紙セレクタ32および排紙ローラ対33が配設されている。

なお、搬送路24の終端部には前記排紙セレク

形成装置としてのレーザープリンターを備えた画像形成ユニット装置の外観斜視図および内部構成を示す概略的縦断側面図であり、次ぎのような構成となっている。

図中1は、画像形成装置としてのレーザープリンターであり、このレーザープリンター1はマルチカセットフィーダ2上に載置され、その後部側にはエンベロープフィーダ3が装着されている。

上記レーザープリンター1は次ぎのように構成となっている。すなわち、図中5はレーザープリンタのプリンタ本体であり、このプリンタ本体5の上面後部は一段高くなっており、その上面中央部には排紙部としての凹部6が形成されている。この凹部6にはジョガー7が設けられている。更に、この凹部6の右側には操作窓表示部9および操作窓スイッチ部10が設けられ、左側には3つのICカード挿入11…が配設されている。

また、上記プリンター本体5内には画像形成機構4が設けられている。すなわち、図中15は回転自在に設けられた感光ドラム15で、その周囲

タ32により振り分けられた用紙P、封筒Aなどを排紙部としての前記凹部6に導く排紙ローラ対34を備えた分岐搬送路35が形成されている。

第6図に示す40は下部カバー、41はフロントカバー、42は上部カバー、43は右カバー、44は左カバー、45は右カバー開閉レバー、46は上部ユニット開閉用レバーであり、第5図に示す47、48…、49は制御部を構成する制御基板である。

しかして、画像形成動作に当たっては、感光体15が駆動されるとともに、帯電装置16の働きで、一様に帯電され、ついでレーザー光学系17により感光体15上に画像信号に対応した露光が行われて静電潜像が形成される。ついで、この感光体15上の静電潜像はトナーとキャリアとからなる二成分現像剤を使用する現像装置18により現像されて、現像剤像として画像転写部23側に送込まれる。

一方、この現像剤像形成動作に同期して給紙カセット25、26、27から選択的に取出された

用紙P、または手差しされた用紙P、あるいはエンベロープファイダー3から供給された封筒Aがライニングローラ対30を介して送込まれ、予め、感光体15上に形成された上記現像剤像が転写装置19の働きにより用紙Pあるいは封筒Aに転写される。ついで、用紙Pあるいは封筒Aは剥離装置20により、感光体15から引き剥がされて、搬送路24を通過して定着ユニット31に送り込まれる。ここで、現像剤像が用紙Pあるいは封筒Aに溶融定着された後、排紙セクタ32により、排出方向が区分けられた上部のジョガー7もしくは下部の排紙トレイ12上に排出される。

ところで、上記定着ユニット31はプリンター本体5内に着脱自在に設けられている。この定着ユニット31はロック機構51によってロックされている。このロック機構51は第1図に分解して示すように構成されている。すなわち、図中52はL字型に折曲形成されたベースで、このベース52上にはスライダ53が設けられている。前記ベース52にはねじ孔52a、52aが形成

され、また上記スライダ53には前記ねじ孔52a、52aに連通する長孔53a、53aが形成されている。上記スライダ53は第2図に示すように上記長孔53a、53aを介してベース52のねじ孔52a、52aに螺着される取付けねじ60、60によりベース52上に移動自在に取付けられている。また、前記スライダ53の両側部にはロックレバー(ロック部材)54、54が一体的に形成されている。さらに、上記スライダ53の背面部には折曲部57が形成され、このスライダ53の折曲部57と上記ベース52の折曲部58との間には第2図に示すように付勢部材としての湾曲状の板ばね55が介在されている。

一方、上記定着ユニット31のユニット本体31aの下部側には第3図および第4図に示すように、係止孔59、59が形成され、この係止孔59、59に上記スライダ53のロックレバー54、54の先端部が係脱自在に係止されて定着ユニット31がロックされるようになっている。

つぎに、上記定着ユニット31の着脱方法について説明する。まず、定着ユニット31を取付ける場合には、第3図(a)に示すように、定着ユニット31を上部側から下降させ、ロックレバー54の先端上面傾斜部54aに下端部を当接させて、そのまま押し下げる。これにより、ロックレバー54が板ばね55の付勢力に抗して後退され、そのロックレバー54、54の先端部が定着ユニット31の係止孔59、59に対向すると、第3図(b)に示すように、板ばね55の付勢力によりロックレバー54、54が前進されて定着ユニット31の係止孔31a、31aに係止されて定着ユニット31がロックされる。

つぎに、定着ユニット31を取外す場合について説明する。このときは、まず、第4図(a)に示すように、スライダ53の折曲部57に指を掛けて、これを板ばね55の付勢力に抗して後退させることにより、その先端部が定着ユニット31の係止孔59、59から離脱しロックが解除されることになる。しかるのち、第4図(b)に

示すように、定着ユニット31を上方に引上げて取外す。

上述したように、スライダ53を板ばね55の付勢力あるいは付勢力に抗してスライドさせるだけで、定着ユニット31をロックし、或いはロックを解除できるため、定着ユニット31の着脱作業がワンタッチになり、その作業性が著しく容易になるという。

なお、本発明は上記一実施例に限られることなく、その要旨の範囲内で種々変形実施できることは勿論である。

(発明の効果)

以上説明したように、本発明によれば、定着ユニットのロックおよびその解除をワンタッチで行うことができ、定着ユニットの着脱作業が極めて容易になるという効果を奏するものである。

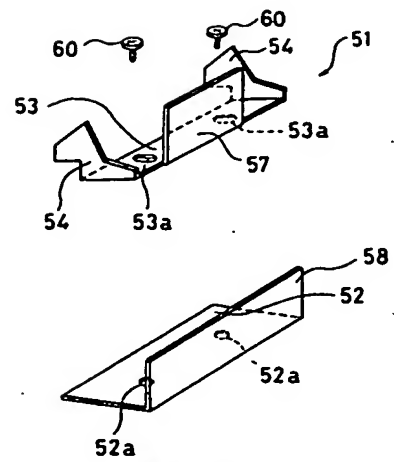
4. 図面の簡単な説明

図面は本発明の一実施例を示すもので、第1図はロック機構を分解して示す斜視図、2図はロック機構を示す平面図、第3図(a)、(b)は定

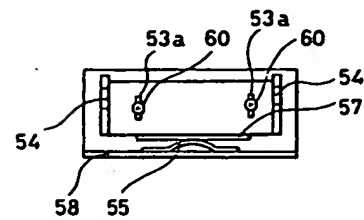
替ユニットの取付け状態を示す説明図、第4図
(a)、(b)は定着ユニットの取外し状態を示
す説明図、第5図は面形成ユニットを示す外観
斜視図、第6図はその内部構成図である。

1…装置本体、31…定着ユニット、54、
54…ロックレバー、55…板ばね(付勢部材)。

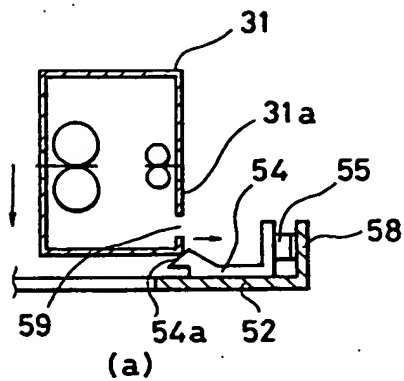
出願人代理人 弁理士 鈴江武彦



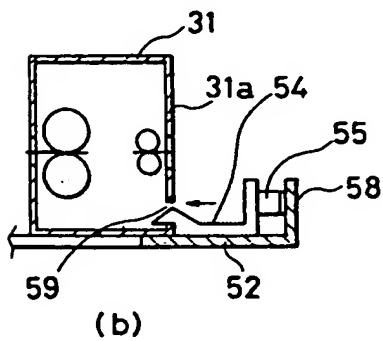
第 1 図



第 2 図

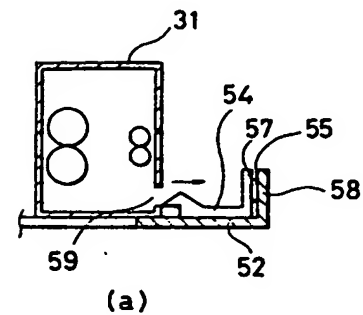


(a)

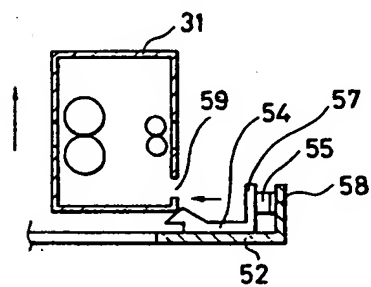


(b)

第 3 図



(a)



(b)

第 4 図

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CLAIMS

[Claim(s)]

[Claim 1] The anchorage device characterized by having the Toride section for holding in case this anchorage device is moved in a removable anchorage device from the body of image formation equipment, and the lock device for immobilization which fixes this anchorage device to the body of image formation equipment, and said Toride section serving as the control unit of said lock device for immobilization, and the control unit for said attachment and detachment.

[Claim 2] Said Toride section is an anchorage device according to claim 1 characterized by having arranged the part more nearly up than the center-of-gravity location of said anchorage device, and having arranged other parts caudad from the center-of-gravity location.

[Claim 3] The anchorage device according to claim 1 characterized by having arranged said Toride section to the sheet cross direction both ends of said anchorage device.

[Claim 4] The object for the right hands for holding, in case this anchorage device is moved in a removable anchorage device from the body of image formation equipment, and the two Toride sections for left hands, It has the lock device for immobilization which fixes this anchorage device to the body of image formation equipment, and has become the grip handle configuration which can be grasped with the left hand by said Toride section in a right-hand list. Said Toride section The control unit of said lock device for immobilization, The anchorage device characterized by serving as the control unit for said attachment and detachment.

[Claim 5] Said Toride section is an anchorage device according to claim 4 characterized by the rotatable thing.

[Claim 6] The anchorage device according to claim 4 characterized by having arranged said two Toride sections to the sheet cross direction both ends of said anchorage device.

[Claim 7] Said Toride section is the anchorage device of six claim 1 characterized by forming by the plastics member thru/or given in any 1 term.

[Claim 8] Image formation equipment characterized by equipping a sheet with an image formation means to form an image, a conveyance means to convey said sheet, and the anchorage device of seven claim 1 thru/or given in any 1 term.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the anchorage device to which the image on a sheet is fixed with heating, and image formation equipment equipped with this.

[0002]

[Description of the Prior Art] The printer as image formation equipment, facsimile, and a copying machine are provided with many things which used the electrophotography method. In the image formation equipment of this electrophotography method, the configuration equipped with an image formation means to form a developer image, an imprint means to imprint a developer image on a sheet, a conveyance means to convey a sheet, and the anchorage device to which an image is fixed by heating on a sheet and pressurizing it is usual.

[0003] An anchorage device has a deferred configuration in the body of equipment, and the configuration of a unit is taken and many removable configurations are also seen with an anchorage device simple substance. When an anchorage device reaches a life or breaks down by this, it is possible to exchange only anchorage devices.

[0004]

[Problem(s) to be Solved by the Invention] By the way, it is convenient if a user can perform processing when a sheet produces a paper jam within an anchorage device, and exchange of an anchorage device himself, without being based on a serviceman. for that purpose, an anchorage device -- for a user -- attachment and detachment -- it is desirable for it to be easy.

[0005] however, the configuration of an anchorage device unit -- Toride -- even if it was a removable case, the attachment-and-detachment approach was not simple and was what it is hard for a user to treat. This is because an anchorage device generally serves as a unit with a heavy anchorage device by making the outer frame from the sheet metal since especially the weight of a pressurization roller is large. Moreover, since the inside of an anchorage device is maintained at an elevated temperature at the time of image formation, also in the outer frame of an anchorage device, especially a sheet-metal part becomes an elevated temperature, and a user has to wait until this gets cold. Moreover, since the outer frame is made from the sheet metal, when the edge of a sheet metal is exposed, there is difficulty in a user holding this empty-handed.

[0006] Furthermore, the driving force for driving the pressurization roller in an anchorage device is large, and at the time of image formation, since great torque is transmitted to an anchorage device, it is necessary to equip the body of image formation equipment with an anchorage device certainly.

[0007] Then, it is easy to have this invention and handling aims at offering the anchorage device with which the body of image formation equipment can be equipped certainly easily.

[0008]

[Means for Solving the Problem] The typical configuration of the anchorage device applied to this invention in order to solve the above-mentioned technical problem has the Toride section for holding, in case this anchorage device is moved in a removable anchorage device from the body of image formation

equipment, and the lock device for immobilization which fixes this anchorage device to the body of image formation equipment, and it is characterized by for said Toride section to serve as the control unit of said lock device for immobilization, and the control unit for said attachment and detachment.

[0009]

[Embodiment of the Invention] The first operation gestalt of the anchorage device concerning [first operation gestalt] this invention and image formation equipment is explained. Drawing in which the whole image formation equipment block diagram and drawing 2 show the condition that, as for the front view of an anchorage device and drawing 3, the user grasped the side-face sectional view of an anchorage device, and drawing 4 grasped the anchorage device as for drawing 1, and drawing 5 are the perspective views explaining the outer frame of an anchorage device.

[0010] (Whole configuration) The whole image formation equipment configuration is first explained using drawing 1. A printer 100 is image formation equipment which adopted the electrophotography method. the conveyance roller pair which the separation feed of every one sheet S contained by the feed cassette 101 is carried out with the feed roller 102, and is a conveyance means -- pass 103 -- a resist roller pair -- it is conveyed 104. Resist roller pair 104 corrects the skew of Sheet S, and re-feeds with it to predetermined timing.

[0011] A latent image is formed in the photo conductor drum 106 of the process cartridge 105 which is an image formation means of the laser beam from the laser-scanner unit 108, and a toner image is formed on the photo conductor drum 106 by making a toner adhere to a latent image. The formed toner image is imprinted by Sheet S with the imprint roller 107.

[0012] The sheet S which had the toner image imprinted is conveyed to an anchorage device 1 according to the conveyance force of the photo conductor drum 106 and the imprint roller 107. Sheet S is established in a toner image by impressing heat and a pressure from the heating roller 111 and the pressurization roller 112 of an anchorage device 1 -- having -- a discharge roller pair -- pass 109 -- the loading tray 110 is loaded.

[0013] Moreover, as shown in drawing 1, the tooth-back covering 2 is formed in the direction of arrow-head C possible [disconnection] at the printer 100, and the anchorage device 1 consists of equipment tooth backs removable in the arrow head A1 and A 2-way.

[0014] (Anchorage device) Drawing 2 is a view Fig. from arrow-head B in drawing 1. As shown in drawing 2 and drawing 3, the outer frame of an anchorage device 1 constitutes the fixing frame [which dedicated the heating roller 111 and the pressurization roller 112] 6, and anchorage device 1 bottom with the wrap fixing top plate 9 and the fixing covering 3 arranged at the equipment tooth-back side of the fixing frame 6.

[0015] The Toride sections 3a and 3b and release levers 4a and 4b are formed in the fixing covering 3. The Toride sections 3a and 3b are the Toride sections for holding, in case an anchorage device is moved, and serve as the control unit for attachment and detachment. Release levers 4a and 4b are the Toride sections for holding, in case an anchorage device is moved, and are the control units for attachment and detachment, and serve as the control unit of the lock device for immobilization further. Release levers 4a and 4b have the discharge springs 5a and 5b, respectively. The alternate long and short dash line shown in drawing 2 - drawing 4 is an aerial wire in which the center of gravity of an anchorage device 1 is shown, and the Toride sections 3a and 3b of the fixing covering 3 have been arranged above the center of gravity, and arrange release levers 4a and 4b down the center of gravity. Moreover, Toride section 3a and release lever 4a have been arranged at the left end of the sheet cross direction of an anchorage device 1, and Toride section 3b and release lever 4b are arranged at the right end.

[0016] In addition, a user is all able to operate [the thermally conductive low quality of the material and] the Toride sections 3a and 3b of fixing covering, and release levers 4a and 4b empty-handed, even if it specifically forms by the plastics member etc. and an anchorage device 1 serves as an elevated temperature by image formation. Moreover, by coloring it green, blue, etc. and classifying by color with other members, the Toride sections 3a and 3b and release levers 4a and 4b are constituted so that it may turn out which part a user should grasp.

[0017] Moreover, the fixing frame 6 has the spigot sections 6a and 6b and ***** 7a and 7b in one. The

spigot sections 6a and 6b are inserted in the holes 8a and 8b established in the fixing stay 8 of the body of equipment. While the stop sections 10a and 10b are formed in the lower limit of the fixing stay 8 at one and ***** 7a and 7b of the fixing frame 6 are dashed, the tip of release levers 4a and 4b is stopped. The lock device for immobilization is constituted by these stop sections 10a and 10b, ***** 7a and 7b and release levers 4a and 4b, and the discharge springs 5a and 5b.

[0018] The installation condition to the printer 100 of an anchorage device 1 is explained. The spigot sections 6a and 6b of the fixing frame 6 are inserted in the holes 8a and 8b of the fixing stay 8, and, thereby, positioning of the vertical direction is carried out to the shaft-orientations list of an anchorage device 1. And when the tip of release levers 4a and 4b is caught in the stop sections 10a and 10b of the fixing stay 8, while positioning the path of insertion of an anchorage device 1, a stopper's duty is achieved so that an anchorage device 1 falls out and may not appear in the conveyance direction downstream, even if image formation actuation begins and a drive starts an anchorage device 1.

[0019] Next, an anchorage device 1 is explained about the actuation taken out from a printer 100. When removing the sheet SJ which carried out the jam in the anchorage device 1 interior when requiring exchange by the life or failure, it is necessary to take out an anchorage device 1.

[0020] First, the tooth-back covering 2 is opened in the direction of C (R> drawing 1 1 reference), and a user picks out an anchorage device 1 from a printer 100 in the direction of an arrow head A1 using both hands. If the actuation in this case is explained in full detail, as shown in drawing 4, the right thumb U1 will be applied to Toride section 3b of fixing covering, and an index finger U2 will be applied to release lever 4b. The left thumb U1 and an index finger U2 are similarly applied to Toride section 3a and release lever 4a, respectively.

[0021] And the elastic force of the discharge springs 5a and 5b is resisted by the index finger U2 of both hands, release levers 4a and 4b are pushed up, and a lock with the stop sections 10a and 10b of the fixing stay 8 is canceled. Next, an anchorage device 1 is pulled out in the direction of an arrow head A1 (refer to drawing 1), with the release levers 4a and 4b pushed up. Since it supports with the center-of-gravity up side of an anchorage device 1 with the thumb U1 and the center-of-gravity bottom is supported with the finger of both hands by the index finger U2, respectively at this time, it is stabilized and an anchorage device 1 can be pulled out. Moreover, it is possible for it not to be necessary to rehave an anchorage device 1, even after pulling out an anchorage device 1 completely from a printer 100, and to hold an anchorage device 1 and to move depending on the same method of *****.

[0022] Next, an anchorage device 1 is explained about the actuation with which a printer 100 is equipped. Like the time of taking out an anchorage device 1, the thumb U1 of both hands is applied to Toride 3a and 3b of fixing covering, and the method of maintenance of an anchorage device 1 applies an index finger U2 to release levers 4a and 4b.

[0023] And the actuation and the contrary which take out an anchorage device 1, an anchorage device 1 is inserted into a printer 100 in the direction of an arrow head A2 (refer to drawing 1). Then, while the spigot sections 6a and 6b of a fixing frame are inserted in the holes 8a and 8b of the fixing stay 8, respectively and are positioned, a printer 100 is certainly equipped with an anchorage device 1 because release levers 4a and 4b overcome and stop the stop sections 10a and 10b of the fixing stay 8. In addition, in case it equips with an anchorage device 1, an anchorage device 1 is not superfluously pushed in because ***** 7a and 7b of a fixing frame contact the fixing stay 8. Moreover, a printer 100 can be equipped in one actuation, without rehaving an anchorage device 1 also in the case of wearing.

[0024] By serving as the control unit of the lock device for immobilization, and the control unit for attachment and detachment, the Toride section for holding, in case an anchorage device is moved, as explanation was given [above-mentioned] is stabilized, and can perform actuation which takes out lock discharge of an anchorage device and an anchorage device, and actuation which holds and moves an anchorage device further. Moreover, the above-mentioned actuation can be performed without having a hand again, and the operability by the user can be raised. Moreover, it is stabilized and an anchorage device can be held because a part of Toride section is above the center-of-gravity location of an anchorage device and another side is in the lower part.

[0025] The second operation gestalt of the anchorage device concerning [second operation gestalt] this

invention and image formation equipment is explained. Drawing 6 is drawing showing the condition that the user grasped the side-face sectional view of an anchorage device, as for the front view of an anchorage device, and drawing 7 , and drawing 8 R> 8 grasped the anchorage device, attaches the sign same about the part to which explanation overlaps the above-mentioned first operation gestalt, and omits explanation.

[0026] Although a configuration which pinches the Toride sections 3a and 3b and release levers 4a and 4b with a finger in the above-mentioned first operation gestalt showed, in this operation gestalt, a grip handle configuration and a lever constitute the Toride section.

[0027] As shown in drawing 6 , the handles 20a and 20b of a grip handle configuration and control levers 21a and 21b are provided in the fixing covering 3. Handles 20a and 20b are the Toride sections for holding, in case an anchorage device is moved, and serve as the control unit for attachment and detachment. Control levers 21a and 21b are the Toride sections for holding, in case an anchorage device is moved, and are the control units for attachment and detachment, and serve as the control unit of the lock device for immobilization further.

[0028] As shown in drawing 7 , control levers 21a and 21b are constituted rotatable, and they are constituted so that the tip of the opposite side may contact release levers 4a and 4b the side operated to a rotation shaft. Between Handles 20a and 20b and control levers 21a and 21b, the discharge springs 22a and 22b are attached, respectively, it was energized by these discharge springs 22a and 22b, and control levers 21a and 21b are in contact with the projections 23a and 23b prepared in Handles 20a and 20b. At this time, release levers 4a and 4b are energized with the discharge springs 5a and 5b like the above-mentioned first operation gestalt, and that tip is stopped by the stop sections 10a and 10b of the fixing stay 8.

[0029] In addition, even if each forms Handles 20a and 20b and control levers 21a and 22b by the plastics member etc. and an anchorage device 1 serves as an elevated temperature by image formation, a user is able to operate it empty-handed. Moreover, by coloring it green, blue, etc. and classifying by color with other members, Handles 20a and 20b and control levers 21a and 22b are constituted so that it may turn out which part a user should grasp.

[0030] The installation condition to the printer 100 of an anchorage device 1 is explained. The spigot sections 6a and 6b of the fixing frame 6 are inserted in the holes 8a and 8b of the fixing stay 8, and, thereby, positioning of the vertical direction is carried out to the shaft-orientations list of an anchorage device 1. And when the tip of control levers 21a and 21b is caught in the stop sections 10a and 10b of the fixing stay 8, while positioning the conveyance direction of an anchorage device, a stopper's duty is achieved so that an anchorage device 1 falls out and may not appear in the conveyance direction downstream, even if image formation actuation begins and a drive starts an anchorage device 1.

[0031] Next, an anchorage device 1 is explained about the actuation taken out from a printer 100. First, with both hands, Handles 20a and 20b and control levers 21a and 21b are grasped, as shown in drawing 8 , the energization force of the discharge springs 22a and 22b is resisted in control levers 21a and 21b with fingers other than the thumb, and it is made to rotate in the direction of arrow-head D. Then, the tip of control levers 21a and 21b resists the energization force of the discharge springs 5a and 5b, and rotates release levers 4a and 4b, and a lock with the stop sections 10a and 10b of the fixing stay 8 is canceled. Next, release levers 4a and 4b are pulled out in the direction of an arrow head A1 (refer to drawing 1), where a lock is canceled. At this time, since Handles 20a and 20b and control levers 21a and 21b are grasped with both hands, it is stabilized, and an anchorage device 1 can be pulled out. Moreover, it is possible for it not to be necessary to rehave an anchorage device 1, even after pulling out an anchorage device 1 completely from a printer 100, and to hold an anchorage device 1 and to continue moving depending on the same method of ****.

[0032] Next, an anchorage device 1 is explained about the actuation with which a printer 100 is equipped. The method of maintenance of an anchorage device 1 grasps Handles 20a and 20b and control levers 21a and 21b with both hands like the time of taking out an anchorage device 1. And the actuation and the contrary which take out an anchorage device 1, an anchorage device 1 is inserted into a printer 100 in the direction of an arrow head A2 (refer to drawing 1). Then, while the spigot sections 6a and 6b

of a fixing frame are inserted in the holes 8a and 8b of the fixing stay 8, respectively and are positioned, a printer 100 is certainly equipped with an anchorage device 1 because release levers 4a and 4b overcome and stop the stop sections 10a and 10b of the fixing stay 8. In addition, in case an anchorage device 1 is inserted, an anchorage device 1 is not superfluously pushed in because ***** 7a and 7b of a fixing frame run against the fixing stay 8. A printer 100 can be equipped in one actuation, without having an anchorage device 1 again also in this case.

[0033] As explanation was given [above-mentioned], by forming the Toride section in a grip handle configuration, it can grasp by hand and maintenance of the anchorage device stabilized further, migration, attachment-and-detachment actuation, etc. can be performed.

[0034] The third operation gestalt of the anchorage device concerning [third operation gestalt] this invention and image formation equipment is explained. Drawing in which drawing 9 shows the condition that, as for the front view of an anchorage device and drawing 10, the user grasped the side-face sectional view of an anchorage device, and drawing 11 grasped the anchorage device, drawing showing the H-H cross section of drawing 10, as for drawing 12, and drawing 13 are E view Figs. of drawing 11, attach the sign same about the part to which explanation overlaps the above-mentioned first operation gestalt, and omit explanation.

[0035] Although the above-mentioned first and second operation gestalt constituted the lock device for immobilization by release levers 4a and 4b, when the Toride section rotates in this operation gestalt, the lock device for immobilization is constituted.

[0036] As shown in drawing 9, the handles 30a and 30b of the grip handle configuration of the abbreviation mold for L characters are formed in the fixing covering 3 rotatable from the location F1 (home position) to the location F2 centering on the lower limit. The projections 31a and 31b for stopping in the stop sections 10a and 10b of the fixing stay 8 are formed at the tip of a shaft. Projections 31a and 31b stop with the stop sections 10a and 10b of the fixing stay 8, when Handles 30a and 30b are in a location F1.

[0037] Moreover, hollows 32a and 33a, and every two 32b and 33b are prepared in the shank of Handles 30a and 30b, respectively. On the other hand, the stop projections 3c and 3d with elasticity are formed in the fixing covering 3 of an anchorage device 1 at one. When Handles 30a and 30b are in the location F1 which is a home position, the stop projections 3c and 3d have got into hollows 32a and 32b, respectively. Next, when Handles 30a and 30b are in the location F2 of an abbreviation perpendicular, the stop projections 3c and 3d have got into hollows 33a and 33b, respectively. While rotating Handles 30a and 30b from F1 to F2, the stop projections 3c and 3d of the fixing covering 3 have bent, as a two-dot chain line shows to drawing 12. In this way, by forming the stop projections 3c and 3d of the fixing covering 3, in case the position of Handles 30a and 30b is changed, it becomes possible to tell a user a feeling of actuation.

[0038] In addition, even if it forms Handles 30a and 30b by the plastics member etc. and an anchorage device 1 serves as an elevated temperature by image formation, a user is able to operate it empty-handed. Moreover, by coloring it green, blue, etc. and classifying by color with other members, Handles 30a and 30b are constituted so that it may turn out which part a user should grasp.

[0039] The installation condition to the printer 100 of an anchorage device 1 is explained. The spigot sections 6a and 6b of the fixing frame 6 are inserted in the holes 8a and 8b of the fixing stay 8, and, thereby, positioning of the vertical direction is carried out to the shaft-orientations list of an anchorage device 1. And when the projections 31a and 31b of Handles 30a and 30b are caught in the stop sections 10a and 10b of the fixing stay 8, while positioning the conveyance direction of an anchorage device 1, a stopper's duty is achieved so that an anchorage device 1 falls out and may not appear in the conveyance direction downstream, even if print actuation begins and a drive starts an anchorage device 1.

[0040] Next, an anchorage device 1 is explained about the actuation taken out from a printer 100. First, with both hands, Handles 30a and 30b are grasped, as shown in drawing 11, and it is made to rotate from a location F1 to a location F2. Then, it rotates, as the projections 31a and 31b of a handle are also shown in drawing 13, and a lock with the stop sections 10a and 10b of the fixing stay 8 is canceled. Next, Handles 30a and 30b are pulled out in the direction of an arrow head A1 (refer to drawing 1),

where a lock is canceled. At this time, since Handles 30a and 30b are grasped with both hands, it is stabilized, and an anchorage device 1 can be pulled out. Moreover, it is possible for it not to be necessary to rehave an anchorage device 1, even after pulling out an anchorage device 1 completely from a printer 100, and to continue holding an anchorage device 1 depending on the same method of ****.

[0041] Next, an anchorage device 1 is explained about the actuation with which a printer 100 is equipped. The method of maintenance of an anchorage device 1 grasps Handles 30a and 30b with both hands like the time of taking out an anchorage device 1. At this time, Handles 30a and 30b are in the location of F2. And an anchorage device 1 is inserted the actuation and the contrary which take out an anchorage device 1 into a printer 100 in the direction of an arrow head A2 (refer to drawing 1). The spigot sections 6a and 6b of a fixing frame are inserted in the holes 8a and 8b of the fixing stay 8, respectively.

[0042] Next, Handles 30a and 30b are rotated to the location of F1. A printer 100 is certainly equipped with an anchorage device 1 with the projections 31a and 31b of a handle also rotating, and being locked by this to the stop sections 10a and 10b of the fixing stay 8. In addition, in case an anchorage device 1 is inserted, an anchorage device 1 is not superfluously pushed in because ***** 7a and 7b of a fixing frame run against the fixing stay 8. A printer 100 can be equipped in one actuation, without having an anchorage device 1 again also in this case.

[0043] As explanation was given [above-mentioned], by forming the Toride section in a grip handle configuration, it can grasp by hand and maintenance of the anchorage device 1 stabilized further, migration, attachment-and-detachment actuation, etc. can be carried out. Moreover, reduction of components mark can be aimed at by providing the lock device for immobilization with the components of a handle and one.

[0044]

[Effect of the Invention] By serving as the control unit of the lock device for immobilization, and the control unit for attachment and detachment, the Toride section for holding, in case an anchorage device is moved in the anchorage device and image formation equipment concerning this invention, as explanation was given [above-mentioned] is stabilized, and can perform actuation which takes out lock discharge of an anchorage device and an anchorage device, and actuation which holds and moves an anchorage device further. Moreover, the above-mentioned actuation can be performed without having a hand again, and the operability by the user can be raised.

[0045] Moreover, by forming the Toride section in a grip handle configuration, it can grasp by hand and maintenance of the anchorage device stabilized further, migration, attachment-and-detachment actuation, etc. can be carried out.

[0046] Furthermore, reduction of components mark can be aimed at by providing the lock device for immobilization with the components of a handle and one.

[Translation done.]